

CLAIMS:

1.           A mobile communication system comprising:  
              mobile terminal having means for receiving  
radio waves from a plurality of base stations;  
              a home network to which the mobile terminal  
belongs;  
              a plurality of subnetworks to which the  
terminal might move;  
              advertising routers respectively provided in  
the subnetworks to advertise information of a pertinent  
subnetwork to the mobile terminal via the base station;  
and  
              a home agent device having means for managing  
location information of the mobile terminal and  
registering a routing address to be used temporarily in  
a subnetwork to which the mobile terminal moves, and  
means responsive to a movement of the mobile terminal  
when the routing address is already registered, for  
capturing a packet addressed to a home address of the  
mobile terminal in the home network and transferring  
the captured packet to the subnetwork to which the  
mobile terminal moves in accordance with the registered  
routing address,  
              wherein each of said advertising routers  
comprises means for advertising an interface ID and a  
prefix section of the routing address from a base  
station as pertinent subnetwork information, and  
              wherein said mobile terminal comprises a

registration unit, and if the terminal has received a plurality of routing addresses having same prefix section and differing in interface ID while moving from the home network to a different subnetwork, then the registration unit combines the plurality of routing addresses into one recognizable routing header address in accordance with a predetermined rule, and registers the routing header address with the home agent device.

2. The mobile communication system according to Claim 1, wherein

one different bit is assigned to the interface ID every subnetwork,

each of the advertising routers comprises means for transmitting subnetwork information which includes a routing address having "1" set in a bit assigned every subnetwork, and

the mobile terminal comprises means responsive to coincidence among prefix sections of routing addresses contained in a plurality of received subnetwork information pieces, for conducting a logical sum operation on interface IDs of routing addresses contained in the plurality of received subnetwork information pieces and adopting a result of the logical sum operation as the routing header address.

3. The mobile communication system according to Claim 2, wherein the home agent device comprises:

means for storing a combination of a care-of address sent from the mobile terminal, the routing

header address, and the home address of the terminal;

means for setting the care-of address as a routing header address of a packet addressed to the home address of the terminal;

means for encapsulating the packet having the care-of address set therein, and setting the routing header address as a destination address; and

means for sending out the encapsulated packet.

4. The mobile communication system according to Claim 1, wherein a router in a mobile communication network comprises:

means for generating a packet having a destination address set to "1" in one bit of an interface ID, from a packet having the routing header address set as a destination address delivered from the home agent device and having "1" set in a plurality of bits of the interface ID, and transmitting the generated packet; or

a routing table set so as to transfer a packet having a prefix identical to that of a routing address of subnetwork information advertised by the advertising router, as a destination address as far as the advertising router that is advertising an address having "1" set in one bit of an interface ID.

5. The mobile communication system according to Claim 1, wherein

a part of the prefix section of the

subnetwork information advertised by the advertising router is assigned one bit that differs from subnetwork to subnetwork, as a subnetwork indication bit,

each of the base stations in the subnetworks comprises means for transmitting subnetwork information having "1" set in the assigned bit,

the mobile terminal comprises a registration unit, and if the prefix sections of a plurality of received subnetwork information pieces with the subnetwork indication bit excluded coincide, the registration unit conducts a logical sum operation on the prefix sections of the plurality of received subnetwork information pieces, generates a care-of address having a result of the logical sum operation as a prefix section, and registers the care-of address with the home agent device, and

a router in the mobile communication network comprises a routing table, and in case where a destination address of a packet to be transferred has "1" set in a plurality of the subnetwork indication bits, the routing table is set so as to transfer the packet as far as an advertising router that is advertising an address having "1" set in any one bit of the subnetwork indication section as a prefix section of subnetwork information.

6. The mobile communication system according to Claim 1, wherein

the mobile communication system comprises a

plurality of routers for transferring the packet in a mobile communication network,

the advertising router in each subnetwork comprises means for advertising subnetwork information, and the subnetwork information includes main subnetwork information for transferring a packet in the subnetwork and assistant subnetwork information,

the mobile terminal comprises: means responsive to reception of the subnetwork information from one base station, for generating a care-of address based on the main subnetwork information; means responsive to reception of the subnetwork information from a plurality of base stations and prefix sections of a plurality of received assistant subnetwork information pieces being identical, for generating a care-of address based on the prefix sections; and means for transmitting the generated care-of address to the home agent device, and

each of the routers for transferring the packet comprises a routing table set so as to conduct multicast routing of a packet having a prefix section of the assistant subnetwork information as far as each base station transmitting the assistant subnetwork information.

7. The mobile communication system according to Claim 4, wherein the mobile terminal comprises means for receiving and processing a packet addressed to a plurality of care-of addresses.

8. The mobile communication system according to Claim 5, wherein

the mobile communication system comprises a plurality of routers for transferring the packet in a mobile communication network, and

at least one of the routers comprises:

means for creating a routing table based on routing information received from other routers and routing information of the own router and exchanging routing information with other routers; and

means responsive to coincidence between routing information the own router has or received from other routers and prefix sections of a plurality of subnetwork information pieces advertised by the advertising router with subnetwork indication sections excluded, for calculating a logical sum on the coinciding prefix sections of the plurality of subnetwork information pieces and adding a result of the logical sum calculation to the routing table.